

## ABSTRACTS

This section of the JOURNAL is published in collaboration with the two abstracting Journals, ABSTRACTS OF WORLD MEDICINE and OPHTHALMIC LITERATURE, published by the British Medical Association. The abstracts are divided into the following sections:

*Syphilis (Clinical, Therapy, Serology, Pathology, Experimental).*  
*Gonorrhoea.*  
*Non-Gonococcal Urethritis and Allied Conditions.*  
*Reiter's Disease and Allied Conditions*  
*Antibiotics and Chemotherapy.*  
*Public Health and Social Aspects.*  
*Miscellaneous.*

After each subsection of abstracts follows a list of articles that have been noted but not abstracted.

### SYPHILIS (Clinical)

**Diagnosis of Early Syphilis.** OLANSKY, S. (1966). *Med. Ann. D. C.*, 35, 367.

**Problems of Congenital Syphilis: Report of a Child with a Sero-negative Mother.** (Zur Problematik der Lues connata: Bericht über ein Kind mit seronegativer Mutter.) QUEENS, U., and HÖFFGEN, E. M. (1966). *Z. Kinderheilk.*, 97, 158. 1 fig., 24 refs.

**Nephrotic Syndrome associated with Congenital Syphilis.** POLLNER, P. (1966). *J. Amer. med. Ass.*, 198, 263. Bibl.

**Myocardial Infarction in Syphilitic Aortitis.** (El infarto del miocardio en la aortitis sífilítica.) TORRE, J. M., and VELAZQUEZ, T. (1966). *Arch. Inst. Cardiol. Méx.*, 36, 300. 5 figs, bibl.

**Syphilitic Aortitis: 56 Cases followed-up 10 Years after Penicillin Treatment.** (Aortitis sífilítica. 56 casos controlados a los diez años post-tratamiento con penicilina.) SALAS, E. V. (1966). *Arch. Inst. Cardiol. Méx.*, 36, 316. 13 refs.

**Some Consideration on a Problem of To-day: Syphilitic Re-infections.** (Considérations sur un problème d'actualité: Les réinfections syphilitiques.) TRAMIER, G., and ODDOZE, L. (1966). *Presse méd.*, 74, 2085. 1 fig., bibl.

**Syphilitic Coronary Ostial Occlusion.** SCHRIRE, V., BARNARD, C. N., and BECK, W. (1966). *S. Afr. med. J.*, 40, 553.

**Pigmented Pseudo-retinopathy in Congenital Syphilis.** (La pseudo-retinopatia pigmentosa nella lue congenita.) SANTORI, M. (1966). *Minerva oftal.*, 8, 89. 5 figs, 14 refs.

### SYPHILIS (Therapy)

**Treatment of Syphilis.** (La traitement de la syphilis.) TOMARI, V.-A. (1966). *Rev. Cps Santé Armées*, 7, 533. Bibl.

### SYPHILIS (Serology)

**Antigenic Structure of *Treponema pallidum*, Nichols Strain. I. The Demonstration, Nature, and Location of Specific and Shared Antigens.** MILLER, J. N., DE BRUIJN, J. H., BEKKER, J. H., and ONVLEE, P. C. (1966). *J. Immunol.*, 96, 450. 21 refs.

Much of the available knowledge of the antigenic structure of *Treponema pallidum* has been derived from studies with the avirulent Reiter strain, and investigations of virulent strains have produced both limited and controversial results. In the studies here reported from the National Institute of Public Health, Utrecht, Netherlands, relatively tissue-free suspensions of the virulent Nichols strain of *T. pallidum* were obtained by extraction of the testes of infected rabbits with 50 per cent. inactivated rabbit serum in saline. After washing, the suspensions were disintegrated ultrasonically and the lysate separated from the residue by centrifugation. Part of the lysate was salted out with ammonium sulphate, and portions of the three antigens thus obtained were heated at 100°C. for an hour. The activity of the heated and unheated antigens was tested by complement fixation against pools of syphilitic human and rabbit serum before and after absorption of these sera with Reiter protein antigen. Antisera were prepared against the various antigens, and the VDRL, Kolmer, Reiter protein complement-fixation, and treponemal immobilization tests carried out on them. The effect of absorption of the antisera with Reiter protein antigen on their complement-fixing activity with the antigens from *T. pallidum* that were used for their production was investigated.

The presence of heat-labile (protein) and heat-stable (lipopolysaccharide) antigens shared by *T. pallidum* and *T. reuteri* was shown by the reactivity of rabbit syphilitic serum with unheated and heated Reiter protein antigen and by the reactivity of both the unheated and heated lysate antigens from *T. pallidum* with antiserum to Reiter protein. The occurrence of antigens specific for both the Nichols and human strains of *T. pallidum* but absent from *T. reuteri* was shown by the reactivity of the lysate preparations from *T. pallidum* with both human and rabbit syphilitic sera which had been absorbed with Reiter protein. The non-reactivity of the

heat-stable lipopolysaccharide portion of the Reiter protein complex with human serum and its reactivity with serum from rabbits infected with the Nichols strain of *T. pallidum* is interpreted as showing that there are antigenic differences between the rabbit-adapted Nichols strain and strains of *T. pallidum* infecting man.

Tests on the antisera against the various lysate preparations showed the presence of cardiolipin-like antigens in the lysate and residue preparations, but not in the lysate which had been salted out. None of the antisera contained immobilizing antibody against *T. pallidum*. Complement-fixation tests against the various lysate antigens with their antisera after absorption with Reiter protein showed absence of cross-reactivity of the whole lysate and residue antigens with heterologous antisera, indicating definite differences between these two antigens. It is suggested that the lysate antigens are cytoplasmic in nature, while the residue antigens are located in the cell wall.

A. E. Wilkinson

**Intradermal Reactions to Suspensions of Killed Treponemes.** (Les intradermo-réactions aux suspensions de tréponèmes tués.) TEMINE, P., TRAMIER, G., and PRIVAT, Y. (1966). *Proph. sanit. morale*, 38, 154. 22 refs.

The authors report comparative studies of the value of the intradermal "luotest" in the diagnosis of syphilis. The antigen used was a suspension of dead *Treponema pallidum* with 0.5 per cent. Merthiolate (thiomersal) prepared according to the method described by Thivolet *et al.* (*Ann. Inst. Pasteur*, 1953, 84, 23), 0.2 ml. being injected intradermally over the deltoid and a similar volume of Merthiolated saline at another site as a control. The results were read at the 8th day, only a definite macule at the injection site with no erythema at the control site being accepted as positive. The test is a delayed hypersensitivity reaction of the tuberculin type. Histologically the epidermis is normal and the dermis shows infiltration by histiocytes, at times resembling epithelioid cells, around the vessels, which show swelling of the endothelium. There is a similar infiltration in the hypodermis and eosinophils may rarely be present.

The results of 591 luotests on control subjects and patients with definite or possible late syphilis are analysed in great detail and compared with the results of lipoidal antigen and TPI tests. The 200 controls gave negative results with all the tests and had no signs or history of syphilis. The remaining 391 were judged to be syphilitic on clinical or serological grounds or both. The TPI test was positive in 232 (59.4 per cent.) of these cases and the luotest in 124 (31.7 per cent.). The latter included 34 cases in which the TPI test was negative but one or more of the lipoidal antigen tests gave positive results. There were also 27 cases in which the luotest alone was positive; this pattern was found most frequently in aortitis and is thought to indicate a syphilitic aetiology in these cases. Positive luotests were found in five of nine cases of late cutaneous syphilis, nine of 42 cases of tabes, twenty of forty patients with aortitis, ten of fifteen with congenital syphilis, and 59 of

203 with "serological" (latent) syphilis. The authors consider the test to be of definite diagnostic value in late syphilis. [There are a number of apparent numerical discrepancies.]

A. E. Wilkinson

**Serological Reactivation after the Intradermal Injection of Killed Treponemes.** (Les réactivations sérologiques après injection intradermique de treponèmes tués.) RANQUE, J., TRAMIER, G., TEMINE, P., and LATOURELLE, P. (1966). *Proph. sanit. morale*, 38, 176. 15 refs.

To study the effect of the intradermal injection of killed treponemes on the serological reactions quantitative Kline and Vernes tests were performed before and 14 days after the "luotest" [see previous abstract] had been carried out on 85 patients with late syphilis. An increase in the titre of reagin was often found, more frequently when the reaction to the luotest was strongly positive than when it was weak or negative. Definite rises in titre were found in 25 of 28 patients in whom the luotest reaction was strongly positive, in 23 of 39 in whom it was weakly positive, and in eight of eighteen in whom it was doubtful or negative. The duration of the increased production of reagin varied with the original titre and with the intensity of the reaction to the luotest; when the latter was frankly positive, it might last 5-6 months.

To assess the specificity of the reagin response a number of the patients were given tuberculin intradermally; of 21 who reacted to this, only three showed a slight rise in the titre of the reagin at the 7th day, with a return to the original level at the 14th day. Four of the 21 patients gave a positive reaction to the luotest with a rise in titre of reagin; this is considered evidence that the reactivation of reagin production after a luotest is a specific phenomenon. In a small number of tests no evidence was found that the titre of immobilizing antibody was increased in patients who gave a positive reaction to the luotest.

[The criteria of a significant rise in titre are not stated, nor whether the two specimens of serum were titrated at the same time, as is the usual practice.]

A. E. Wilkinson

**Preservation of Serum Antibodies in Syphilis.** (Conservation des anticorps sériques dans la syphilis.) VAISMAN, A., and PARIS-HAMELIN, A. (1966). *Bull. Wld Hlth Org.*, 34, 461.

Pooled human serum from specimens which had given positive reactions with six serological tests for syphilis was inactivated, sterilized by Seitz filtration, and sealed in ampoules which were stored at  $-180^{\circ}\text{C.}$ ,  $-20^{\circ}\text{C.}$ ,  $4^{\circ}\text{C.}$ ,  $22^{\circ}\text{C.}$ , and  $37^{\circ}\text{C.}$  Quantitative tests were performed before storage and at monthly intervals for 6 months by the Kolmer, Wasserman, Kline, Kahn, Reiter protein complement-fixation, treponemal immobilization, and fluorescent treponemal antibody tests.

No drop in titre with any test occurred with the sera stored at  $-180^{\circ}\text{C.}$  and  $-20^{\circ}\text{C.}$  Except for the Kahn

test, the titre in which began to fall after 4 months, storage at 4°C. did not affect the titres in the other tests. At room temperature (22°C.) the titres of all but the Kline and FTA tests began to decline after 1-2 months' storage; the Kline titre remained constant over the whole 6-month period and the FTA titre for 5 months, dropping to half its original value at the sixth month.

The sera stored at 37°C. showed a progressive decline in titre after 1 month in all tests except the FTA, in which the original value was maintained for 4 months.

A. E. Wilkinson

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**Clinical Significance of Chronic Biologic False Positive Wassermann Reaction and "Antinuclear Factors".** BERGLUND, S., and CARLSSON, M. (1966). *Acta med. scand.*, **180**, 407.

A false positive Wassermann reaction may be acute or chronic. Of 39 chronic biological false positive reactors, one woman was found to have systemic lupus erythematosus (SLE) at the beginning of the observation period. During the observation period, which ranged from 1 to 14 years (average 5), SLE developed in one woman with certainty and probably also in another. Of 22 chronic BFP-reactors examined by us, nine had antinuclear factors and four had a slightly increased thyroid antibody titre. Several of the BFP-reactors were apparently healthy. This relatively high incidence of SLE in our BFP-series suggests that all chronic biologic false positive reactors should be followed-up further. All such reactors should be examined for antinuclear factors and thyroid antibodies. Latent SLE should be assumed and treatment with drugs should be avoided as far as possible. Vigilance is necessary during blood transfusion and pregnancy.

[Author's summary]

**Connective Tissue Disease and the Chronic Biologic False Positive Test for Syphilis (BFP Reaction).** HARVEY, A. M., and SHULMAN, L. E. (1966). *Med. Clin. N. Amer.*, **50**, 1271.

**Serologic Tests for Syphilis and the False Positive Reactor.** WUEPPER, K. D., BODILY, H. L., and TUFFANELLI, D. L. (1966). *Arch. Derm.*, **94**, 152.

**Follow-up Study of Patients with Biological False Positive Serological Reactions for Syphilis.** (Katamnestische Untersuchungen bei Patienten mit biologisch unspezifisch positiven Syphilis-Seroreaktionen.) KIRÁLY, K., RÁCZ, I., VERECKEI, I., and TOKODI, I. (1966). *Arch. klin. exp. Derm.*, **225**, 24. 21 refs.

**Studies of False Positive Serological Tests for Syphilis following Smallpox Vaccination.** SALO, O. P., SOMER, T., AHO, K., and CANTELL, K. (1966). *Ann. Med. exp. Fenn.*, **44**, 304. 9 refs.

**Sero-diagnosis of Syphilis.** GARNER, M. F. (1966). *Med. J. Aust.*, **11**, 328.

**Current Sero-diagnosis and Treatment of Syphilis.** OLANSKY, S., and NORINS, L. C. (1966). *J. Amer. med. Ass.*, **198**, 165. 13 refs.

**Practical Use of Autoanalyser for the Serological Diagnosis of Syphilis using a Cardiolipin Antigen.** (Utilisation pratique de l'auto-analyseur pour le séro-diagnostic de la syphilis (étude de 1,009 sérums) utilisant un antigène cardiolipidique.) GAILLON, R., RIPAUULT, J., STUDIÉVIC, C., and DAUSSET, J. (1966). *Path. et Biol.*, **14**, 953. 6 refs.

**Immunologic Aspects of Congenital Syphilis.** AIUTI *et al.* (1966). *Helv. paediat. Acta*, **21**, 66.

**Application of the Immunofluorescence Technique to the Examination of Dried Blood.** (Application de la technique de l'immunofluorescence à l'examen du sang sec.) BOISSE, M. (1966). *Proph. sanit. morale*, **38**, 215. 4 figs, bibl.

**Fluorescent-antibody Techniques in the Diagnosis of Syphilis.** (1966). *Lancet*, **2**, 327 (Leading article).

**Contribution to the Study of the Genus *Treponema*: Anatomical and Antigenic Structure.** (Contribution à l'étude du genre *Treponema*: Structure anatomique et antigénique.) PILLOT, J. (1966). *Biol. méd. (Paris)*, **55**, 343. 46 figs, bibl.

## SYPHILIS (Pathology)

**Ultrathin Sections of *Treponema pallidum* in the Electron Microscope.** OVCHINNIKOV, N. M., and DELEKTORSKY, V. V. (1966). *J. Hyg.*, **10**, 195.

Ultrathin sections of cultivable (Reiter and Kazan) and pathogenic (Nichols and 8TsKVI) strains of *Treponema pallidum* were examined at magnifications of 12,000-140,000. These showed the presence of a two-layered outer membrane, thicker in the cultivable strains, a cytoplasmic cylinder, and fibrils which appeared to originate from raised, rounded structures on the cytoplasmic cylinder at the terminal end of the organism. The localization of the fibrils is thought to vary, being deep to the outer membrane in some places and superficial to it in others. A nuclear vacuole was seen in both cultivable and pathogenic treponemes. Rounded or elongated granular structures enclosed by a two-layered membrane were seen inside spirochaetes, resembling cysts with an outer wall probably formed from the outer wall of the organism. These interpretations are thought to support the view that granular forms of treponemes may be formed under unfavourable environmental conditions. The structures described are illustrated in twelve plates.

A. E. Wilkinson

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**Research on the Persistence of *Treponema pallidum* in the Lymph Nodes of Treated Syphilitics.**

(Ricerche sulla persistenza del *treponema pallidum* nelle linfoghiandole di luetici trattati.) BONCINELLI, U., VACCARI, R., PINCELLI, L., and LANCELOTTI, M. (1966). *G. ital. Derm.*, 107, 1. 5 figs, 5 refs.

From the Dermatological Clinic of the University of Modena the authors report the results of examinations of fluid aspirated from lymph nodes or of excised lymph nodes from eight patients with early syphilis (5 primary, 3 secondary). All were sero-positive before treatment, which consisted of 15 mega-units penicillin, with or without bismuth. Tests were made 6 to 54 days after treatment, dark-ground and silver-stained preparations being examined. Organisms resembling *Treponema pallidum* were found in only one case, a patient treated for early secondary syphilis 10 days previously.

Similar examinations were also performed on inguinal lymph nodes excised from eight patients with "latent" syphilis. Three had been treated for early infections 4 to 47 years previously and one had subsequently developed a gumma. Three had been treated for latent infections 14 to 22 years before and one of these had developed taboparesis. The original status of the remaining two patients was not known. All eight gave positive reactions in the treponemal immobilization (TPI) test at the time of examination; all had had many courses of heavy metals and seven one or more courses of penicillin. Silver staining of sections of lymph nodes showed typical treponemal organisms in two cases and atypical forms in another two. No treponemes were seen in spinal fluid from two of the patients. Rabbits were inoculated subcutaneously with portions of lymph nodes from all eight patients; they did not develop clinical signs of infection, but one animal was found to have a doubtful TPI reaction (40 per cent. specific immobilization) 4 months after infection.

The authors consider that their results confirm those of earlier French (Collart *et al.*, *Ann. Inst. Pasteur*, 1962, 103, 596 and 693; *Abstr. Wld Med.*, 1962, 32, 336) and American workers (Yobs *et al.*, *Arch. Derm.*, 1965, 91, 374; *Abstr. Wld Med.*, 1965, 38, 315) on the persistence of *T. pallidum* after treatment of syphilis and explain the continued positivity of the TPI test in such cases. They stress that the Dieterle-Dunoyer technique of silver staining should be used in the examination of material for treponemes as they found other methods unsatisfactory.

A. E. Wilkinson

**Histopathology of Serpiginous Skin Lesions in Late Syphilis [in Polish].** LEJMAN, K., and BOGDASZEWSKA-CZABANOWSKA, J. (1966). *Przegl. dermat.*, 53, 419. 7 figs, 10 refs.

**Luetic Aneurysms of the Aortic Valve, Sinus of Valsalva, and Aorta.** SOHN, D., and LEVINE, S. (1966). *Amer. J. clin. Path.*, 46, 99. 3 figs, 10 refs.

**SYPHILIS (Experimental)**

**Immunity in Experimental Syphilis. IV. Serological, Reactivity of Antigens extracted from  $\gamma$ -Irradiated *Treponema pallidum* and *Treponema reiteri*.** MILLER, J. N., DE BRUIJN, J. H., and BEKKER, J. H. (1966). *J. Bact.*, 91, 583. 11 refs.

It was previously reported by Miller (*J. Bact.*, 1956, 90, 297) that  $\gamma$ -irradiation of the Nichols strain of *Treponema pallidum* could make it avirulent without affecting its capacity to unite with treponemal immobilizing antibody. The present paper from the University of California School of Medicine, Los Angeles, and the National Institute of Public Health, Utrecht, Netherlands, reports a study of the reactivity of antigens extracted from unirradiated suspensions of the Nichols strain of *T. pallidum*, from suspensions of the same organism after exposure to 652,000r  $\gamma$ -radiation, and from suspensions of the cultivable *T. reiteri* after exposure to  $\gamma$ -radiation in doses ranging from 6,500 to 6,500,000r. *T. pallidum* complement-fixing (TPCF) antigens were prepared from part of the suspensions by the method of Portnoy and Magnuson (*J. Immunol.*, 1955, 75, 348). Further portions were disintegrated ultrasonically and the insoluble material centrifuged off, washed, and resuspended as a particulate antigen, while part of the supernatant was salted out with ammonium sulphate, this procedure also being used to prepare the lipopolysaccharide-protein antigen from the Reiter treponemes. Portions of each antigen were heated at 100°C. for an hour and the complement-fixing (CF) activity of both heated and unheated preparations was tested against a pool of syphilitic rabbit serum by the 1/5 volume Kolmer technique.

Irradiation of *T. pallidum* suspensions produced a loss of CF activity of the heat-labile antigens, but the heat-stable components of the lysates were unaffected. No differences were found between the particulate antigens prepared from irradiated and unirradiated suspensions, nor did heating affect the titres. These antigens are therefore thought to contain only a heat-stable component. No differences were found between TPCF antigens prepared from irradiated and unirradiated suspensions of *T. pallidum*, and similar titres were found before and after heating. This indicates that these antigens are not protein in nature, as hitherto thought, and their failure to react with syphilitic serum absorbed with cardiolipin suggests their "ubiquitous lipid" nature.

Tests on the antigens prepared from *T. reiteri* showed that irradiation, even with 6,500,000r, had no effect on their heat-labile protein or heat-stable lipopolysaccharide components. In gel diffusion tests against an antiserum prepared against Reiter protein, the same number of lines of identity was formed with each of these antigens, showing that precipitinogens were also unaffected by irradiation. Similar tests on the antigen extracts from *T. pallidum* against both anti-syphilitic and anti-Reiter-protein sera showed no evidence of precipitinogens.

A. E. Wilkinson

**Immunologic Response of Goats to Normal and Syphilitic Rabbit Testicular Tissue.** MILLER, J. N., BEKKER, J. H., DE BRUIJN, J. H., and ONVLEE, P. C. (1966). *J. Immunol.*, 97, 184. 15 refs.

### GONORRHOEA

**Antibodies in Human Sera against Antigens in Gonococci, demonstrated by a Passive Haemolysis Test.** MAELAND, J. A. (1966). *Acta path. microbiol. scand.*, 67, 102.

A polysaccharide extract of gonococci was prepared by the method of Chanarin (*J. Hyg.*, 1954, 52, 425) and used to sensitize sheep cells. Sera were absorbed with sheep cells before testing and 0.2 ml. amounts of serial dilutions incubated with an equal volume of a 0.5 per cent. suspension of sensitized cells for 30 minutes at 37°C.

0.2 ml. of a 1 in 15 dilution of complement was then added and the mixtures incubated at 37°C. for a further 30 minutes. The titre was taken as the highest dilution of serum giving complete lysis.

Sera from 100 blood donors and from 145 patients for whom gonococcal complement-fixation tests (GCFT) had been requested were tested in parallel by the haemolysis test and the GCFT. Fifty of the latter group of patients had gonococcal infections. The haemolysis titres ranged from 2 to 256 in 55 per cent. of the donor sera; most of these were low titred, but 7 per cent. were 64 or above. The GCFT was negative in all these sera. 23.5 per cent. of the second group of 145 sera and 38 per cent. of the sera from patients with established gonorrhoea had titres of 64 or above. Haemolysis titres of 256 or above are taken as positive; this level was found in one of the donor sera and in eight of the second group, six of these patients being known to have gonorrhoea. The GCFT gave ten positive and four doubtful results in the 145 sera. The haemolysis test is not thought to offer any advantages over the GCFT. It seems probable that different antibodies are concerned in the two tests because absorption of an immune serum with sensitized cells abolished reactivity in the haemolysis test but did not reduce the complement-fixing titre of the serum.

A. E. Wilkinson

[Reprinted from the *Bulletin of Hygiene*, by permission of the Editor.]

**Rapid Biochemical Presumptive Test for Gonorrhoeal Urethritis in the Male.** PEDERSEN, A. H. B., and KELLY, R. E. (1966). *Publ. Hlth Rep. (Wash.)*, 81, 318.

Gonococci (and other *Neisseria*, and also species of the following genera: *Aeromonas*, *Vibrio*, *Alcaligenes*, and some *Flavobacteria*) produce the enzyme cytochrome oxidase; this reacting on a test paper impregnated with dimethyl phenylenediamine + Alpha naphthol, produces a bright blue colour change due to the formation of indophenol blue. The authors have compared the value of this test-paper biochemical reaction with conventional bacteriological methods in the diagnosis of gonorrhoea. 288 consecutive male cases of urethritis were studied in venereal disease clinics in Seattle and San Diego. A liberal quantity of urethral discharge was applied to both

sides of the test paper, which was then placed in a plastic test-tube with a tight-fitting cap and was read after 10 minutes had elapsed. In addition Gram-stained smears were carried out in all 288 cases and cultures for the gonococcus were performed in 231 cases. The results are presented in two Tables. There were no important differences between the findings in the two clinics despite differences in the bacteriological methods employed. The summarized results showed that there was agreement between the biochemical and bacteriological tests to the extent of 78.1 per cent. Where the results were discordant, the biochemical test gave false negative results in 9 per cent. of 288 cases and false positive results in 12.9 per cent.

The authors considered that the majority of the 26 cases of false negative results were probably due to too small amounts of urethral discharge being obtainable. They acknowledge that further investigation is needed to explain the occurrence of false positive reactions. There follows a discussion on the possible value of this test in the epidemiological control of gonorrhoea, particularly in the United States of America where so many cases are treated by private practitioners. "If further clinical trials by others substantiate our results, the test could conceivably fulfil the practitioner's need."

[This paper has already appeared in two abstract journals of wide circulation without comment; it is necessary to point out that it is by no means evident from the manner in which the data are presented that the group of 288 patients included fifty cases of non-gonococcal urethral discharges and that false positive results to the biochemical test occurred in no less than 37 of these. One wonders why this test was not, in the first place, subjected to a pilot trial in proven cases of non-gonococcal urethritis. The discussion as to the possible value of this test in epidemiological surveys seems quite unrealistic.]

J. A. H. Hancock

**A Survey of the Range of Sensitivity *in vitro* of *N. gonorrhoeae* to Penicillin.** CHACKO, G. W., and YOGESWARI, L. (1966). *Indian J. med. Res.*, 54, 823.

The sensitivity to penicillin of 160 randomly selected strains of gonococci isolated before treatment from 137 men and 23 women in Madras from 1963-5 was tested by a plate dilution method. Three reference strains of high, medium, and low sensitivity were included in each batch of tests, and the end-point taken as the greatest dilution of penicillin completely inhibiting growth. The range of sensitivity was from 0.0024 µg. to 0.6144 µg. penicillin/ml.; strains requiring more than 0.05 µg./ml. for inhibition were regarded as having decreased sensitivity. 73 (45.6 per cent.) fell into this category. 23.4 per cent. of the strains isolated between April, 1963, and September, 1964, and 60.4 per cent. of those isolated between October, 1964, and September, 1965, showed reduced sensitivity, suggesting that, in India as in many other countries, these relatively insensitive strains are becoming more prevalent. 21 of 27 strains (77.8 per cent.) isolated from patients after treatment with 600,000 units PAM had failed showed decreased sensitivity to penicillin.

The range of sensitivity of 25 strains of gonococci to streptomycin varied from 4 to 128  $\mu\text{g./ml.}$ ; thirteen required more than 50  $\mu\text{g./ml.}$  for inhibition and these were all insensitive to penicillin.

With chloramphenicol the inhibitory concentrations ranged from 0.025 to 1.0  $\mu\text{g./ml.}$  and all of the fourteen strains which were only inhibited by 0.2  $\mu\text{g./ml.}$  or more showed decreased sensitivity to penicillin.

The authors' results are compared with those from other countries and the implications regarding treatment discussed.

A. E. Wilkinson

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**Diagnosis of Gonorrhoea by a Fluorescent Antibody Technique.** [In English]. MOUTON, R. P. (1966). *Dermatologica (Basel)*, 132, 343. 13 refs.

In this paper from the Stichting Academisch Ziekenhuis, Utrecht, the author evaluates the direct fluorescent antibody (FA) technique for the diagnosis of gonorrhoea and compares it with conventional culture techniques.

The group of patients examined consisted of 45 females and 55 males. The material obtained from the urethra (and in females the cervix also), was examined by culture and FA techniques. Slides were also used for Gram and methylene blue staining. Results definitely positive for gonorrhoea were obtained in nineteen women and 32 men with the FA technique; in six women and 23 men with culture; and in eight women and thirty men with Gram staining. In the majority of cases showing a discrepancy between the results of culture and FA techniques, there was other evidence to support a diagnosis of gonorrhoea. The author believes that the disappointing results obtained by others with the direct FA technique are due to the very low bacterial density of the material in some cases and the fact that in this study a protracted effort was made to reach a diagnosis in such patients. Except in these difficult cases, for which the FA technique would certainly not be a labour-saving procedure, this method gave quick results and was especially valuable in the examination of females. It is suggested that, in some cases in which the direct results are negative, the delayed FA technique (as opposed to the direct technique used here) might give positive results.

G. W. Csonka

**Treatment of Gonorrhoea.** KING, A. J. (1966). *Med. Gynaec. Sociol.*, 1, 2. 8 refs.

**Diagnosis and Management of Gonorrhoea.** GREAVES, A. B. (1966). *Med. Ann. D. C.*, 35, 369. 20 refs.

**Experience with a Selective Medium in the Routine Diagnosis of Gonorrhoea, with special Regard to Rectal Gonorrhoea in Women.** ROEPSTORFF, S. O., and HAMMARSTRÖM, E. (1966). *Acta path. microbiol. scand.*, 67, 563. 12 refs.

**Gonococcal Arthritis in the Newborn.** GLASER, S., BOXERBAUM, B., and KENNEL, J. H. (1966). *Amer. J. Dis. Child.*, 112, 185. Bibl.

**Gonococcal Arthritis in Pregnancy.** TAYLOR, H. A., BRADFORD, S. A., and PATTERSON, S. P. (1966). *Obstet. and Gynec.*, 27, 776.

**Gonococcal Ophthalmia among Newborn Infants at Los Angeles County General Hospital, 1957-63.** BROWN, W. M., Jr., COWPER, H. H., and HODGMAN, J. E. (1966). *Publ. Hlth Rep. (Wash.)*, 81, 926. 7 refs.

**Post-Gonorrhoeal Urethral Stricture and Hypertension in Nigeria.** ELEBUTE, E. A. (1966). *Trans. roy. Soc. trop. Med. Hyg.*, 60, 676. 5 figs, 8 refs.

**Growth Inhibition of *Neisseriae* by a Carbonic Anhydrase Inhibitor. Influence of  $\text{CO}_2$ -Concentration.** FORKMAN and LAURELL. (1966). *Acta path. microbiol. scand.*, 67, 542.

## NON-GONOCOCCAL URETHRITIS AND ALLIED CONDITIONS

***Candida albicans* and the Contraceptive Pill.** CATTERALL, R. D. (1966). *Lancet*, 2, 830.

Fourteen women who had been taking oral contraceptive pills containing norethynodrel and mestranol were found to have vaginal candidosis which had appeared after an average period of 9 months from the start of oral contraception.

Four men who were the sexual contacts of those women taking oral contraceptive pills who were found to have vaginal candidosis, presented first with candidal balanoposthitis. Four other men were found to have clinical manifestations suggestive of balanoposthitis due to hypersensitivity to vaginal candidosis in their sexual partners.

Treatment with nystatin was satisfactory in most of the patients, but two women had to abandon the use of oral contraceptives on account of frequent relapses.

Inquiry about the use of oral contraceptive pills may help in the management of women with vaginal candidosis and of men with balanoposthitis.

[Author's summary]

**A New Agent for *Candida vaginitis*: Candicidin.** [Report by the Drugs Committee]. (1966). *J. Amer. med. Ass.*, 196, 1144.

**Fine Structure of *Trichomonas vaginalis*: with special reference to the Mastigont System and the Structure of Mitochondria.** YEH YING *et al.* (1966). *Chin. med. J.*, 85, 375.

**Treatment of Vaginal Moniliasis of Pregnancy with a New Antifungal Preparation: Pimaricine.** (Traitement de la monilase vaginale gravidique par un nouvel antifongique biologique: la Pimaricine.) BERNARD and JEROME (1966). *Canad. med. Ass. J.*, 95, 215.

**Non-Specific Epididymitis.** HANLEY, H. G. (1966). *Brit. J. Surg.*, 53, 873.

**Inhibition of TRIC Agents by Virus-induced Interferon.** HANNA, L., MERIGAN, T. C., and JAWETZ, E. (1966). *Proc. Soc. exp. Biol. (N.Y.)*, 122, 417. 12 refs, 4 figs.

**Characteristics of Interferon induced *in vitro* and *in vivo* by a TRIC Agent.** MERIGAN, T. C., and HANNA, L. (1966). *Proc. Soc. exp. Biol. (N. Y.)*, **122**, 421. 19 refs, 1 fig.

### REITER'S DISEASE AND ALLIED CONDITIONS

#### Reiter's Disease and Ankylosing Spondylitis.

GOOD, A. E. (1965). *Acta rheum. scand.*, **11**, 305.

Follow-up information is presented for a series of 47 cases of Reiter's disease. During the acute episodes observed, pain consistent with sacro-iliitis or spondylitis was present in forty cases (85 per cent.). Of 35 patients with radiographs 2 or more years after onset, twenty (57 per cent.) had definite bilateral sacro-iliac disease. Ankylosing spondylitis has been diagnosed in twelve patients, several of whom have followed a progressive course typical for that of severe ankylosing spondylitis. Rheumatoid arthritis has not been documented in our series. Our data and other accumulating evidence appear to link Reiter's disease closely with ankylosing spondylitis. (*Author's summary*)

[The text of this paper gives ample evidence of biased selection in favour of the more severely affected cases to account for the unusually high incidence of spondylitis in this series. J. A. H. H.]

**Incidence and Nature of Urogenital Infection in Ankylosing Spondylitis.** SINGH, M. (1966). *J. Ass. Physns India*, **14**, 483. 2 figs, 9 refs.

**Lymph-Node Involvement in Reiter's Disease (Reiter's Lymphadenitis)** (Lymphknotenbeteiligung bei Reiterscher Krankheit (Reiter-Lymphadenitis).) REICH, H. (1966). *Hautartz*, **17**, 406. 9 figs, bibl.

**A Case of Reiter's Disease** (Ein Fall von Reiterscher Krankheit.) SLONINA, U. (1966). *Derm. Wschr.*, **152**, 800. 7 figs, 10 refs.

### ANTIBIOTICS AND CHEMOTHERAPY

#### Studies on the Epidemiology of Adverse Drug Reactions. II. An Evaluation of Penicillin Allergy.

SMITH, J. W., JOHNSON, J. E., and CLUFF, L. E. (1966). *New Engl. J. Med.*, **274**, 998. 1 fig, 18 refs.

The authors surveyed all cases of adverse reaction to penicillin occurring in the medical wards and all patients referred as penicillin-sensitive to the allergy clinic of the Johns Hopkins Hospital, Baltimore, over a 6-month period in 1964-5, with the object of assessing the value of skin tests with penicilloyl-polylysine for forecasting sensitivity reactions. The results are discussed in relation to other workers' findings.

During the study 1,800 patients were admitted to the wards, of whom 408 (22.6 per cent.) received penicillin. Adverse reactions occurred in 32 (7.8 per cent.) of the

latter compared with rates of 1 to 8 per cent. reported elsewhere. (It is suggested that the higher rate of sensitivity, as in this study, may apply only to those ill enough to be in-patients.) The 32 patients from the wards and 65 referred to the clinic during the same period each received intradermal injections of penicilloyl-polylysine and of benzylpenicillin (penicillin G) in low concentration, repeated at a higher concentration if the result was negative. Weals of 10 mm. diameter or more were regarded as positive reactions. Negative results were obtained with benzylpenicillin for all the ward patients, but seven (21.8 per cent.) of them reacted positively to penicilloyl-polylysine, all but one requiring the higher concentration. Fifteen patients (23 per cent.) from the clinic gave positive results with penicilloyl-polylysine, and of these seven reacted only to the higher concentration; one patient with a negative reaction to penicilloyl-polylysine reacted positively to the high concentration of benzylpenicillin. Of seventeen patients with negative skin responses despite adverse reactions to penicillin therapy who were retested after various intervals, one produced a positive result 9 months later. Of fifteen patients who had no reactions to penicillin therapy and who were skin-tested, only one gave a positive reaction to penicilloyl-polylysine; other workers report 4 to 7 per cent. positive skin tests among non-reactors. There were four cases of systemic reactions to the skin test, but in the light of other reports it was considered that these were due not to the penicilloyl-polylysine but to the benzylpenicillin given at the same time.

Neither age nor race was related to the frequency of reactions to penicillin therapy in the in-patients in this survey, although increased frequency among older patients and Caucasians has been described. The disease for which penicillin was being administered (respiratory infection in two-thirds of the cases) also seemed irrelevant. Men, however, were more often affected (11.3 per cent.) than women (3.3 per cent.) and proportionately more men, among both in- and out-patients, gave positive skin-test reactions (29 per cent. of 58 men and 13 per cent. of 39 women). Since relatively more men were receiving penicillin, it seemed likely that men may have greater opportunities of becoming sensitive. A history of atopy or of other drug reactions was somewhat commoner in the penicillin-sensitive patients, but the numbers were small and the differences not statistically significant. Abnormal liver function appeared to be slightly commoner in the sensitive patients, but abnormal renal function was unrelated. No relation could be observed between the number of positive skin reactions and the lapse of time after the reaction, although other investigators consider this important. Neither length of treatment nor the total amount of penicillin given appeared to have any effect.

Although penicillin has little pharmacological toxicity, it is estimated that there are 2,200,000 people allergic to it in the U.S.A. The 22 per cent. incidence of positive skin tests in penicillin-sensitive patients in this survey is lower than that reported by others (30 to 90 per cent.), but it would have been 30 per cent. if patients had been

accounted sensitive only on the ground of urticaria, maculopapular rash, serum sickness, and local reactions—fever, for instance, being ignored. Skin tests with penicilloyl-polylysine appear to be safer and better related to sensitivity reactions than those with benzylpenicillin. However, although a negative skin-test reaction indicates less likelihood of a penicillin reaction than a positive result, it is no guarantee against it. Sensitivity can develop during treatment, or other determinants than the penicilloyl group may be responsible. Other derivatives need to be evaluated similarly.

Joan R. Gomez

## PUBLIC HEALTH AND SOCIAL ASPECTS

**Difficulties in the Management of Venereal Disease in Mariners.** SCHOFIELD, C. B. S. (1965). *Bull. Wld Hlth Org.*, 33, 867. 2 figs, 15 refs.

The author reports a detailed analysis of the difficulties encountered in the management of venereal diseases in seamen attending clinics at Preston Hospital, North Shields (Northumberland), and in South Shields (Durham). To find out what happened to the seamen's "personal booklets" which are issued to them after diagnosis and treatment in port, a note was made of the admission and disposal of the 638 men who attended these two clinics during the period 1960–2. It was found that in the initial disposal only 100 (15·7 per cent.) defaulted, but fewer were dismissed (as being free of venereal disease) than were transferred (247 (38·7 per cent.) and 291 (45·6 per cent.) respectively); however, a further 5 per cent. returned later, making a final dismissal rate of 278 (43·6 per cent.), while 260 (40·7 per cent.) were transferred and lost to follow-up. Seamen who had been referred by general practitioners were found to have the best chance of being dismissed. Nationality was another but indefinite factor, British seamen having a relatively good record, since many of these were local men with good facilities for management and follow-up. The diagnoses of syphilis and of gonorrhoea, as might be expected, were associated with low dismissal rates. The proportion of cases lost to follow-up varied with the diagnosis: with syphilis the proportion was fairly satisfactory, but this was not the case with urethritis, three times as many patients with the latter diagnosis being transferred out of the clinic as into it. With the advent of penicillin the fear of gonorrhoea has been lost and again the ratio was 3 to 1. The worst figures were those for other venereal infections requiring treatment, where twelve times as many seamen were transferred out and lost sight of as attended the clinics on transfer from elsewhere. Only 9 per cent. of the seamen who were admitted to the two clinics had personal booklets, while 36 per cent. of the patients were transferred out. If other seaport clinics have the same figures, then it is estimated that 75 per cent. of patients with venereal disease are lost to follow-up.

To close the gap in the management of venereal disease in seamen between clinics, the author makes a number of recommendations: that the need for con-

tinued surveillance should be explained to each infected seaman when he is given his personal booklet; that a suitably qualified medical technician should be responsible for treatment and for ensuring that surveillance is carried out on ships that do not carry a doctor; that drugs administered at sea to an infected seaman and entered in his personal booklet should be replaced in the ship's stores free of charge by the port venereal disease clinic; that since a ship carrying a doctor or a technician should represent less risk to the public health than a ship that does not, allowance should be made for this fact when port dues are assessed (to encourage ship-owners to provide adequate general medical care for all crews); that facilities for the diagnosis and treatment of venereal disease in ports should be suited to the special needs of seamen. They should be situated near the docks and multilingual notices should direct seamen to them.

Eric Dunlop

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**Blitz on Syphilis in Alabama.** SMITH, W. H. Y. (1966). *Publ. Hlth Rep. (Wash.)*, 81, 835. 3 figs.

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**Evaluation of Venereal Disease Information Campaign for Adolescents.** ROSENBLATT, D., and KABASAKALIAN, L. (1966). *Amer. J. publ. Hlth*, 56, 1104. 13 refs.

**Social Aspects of Gonorrhoea in the Female.** MORTON, R. S. (1966). *Med. Gynaec. Sociol.*, 1, 2. 9 refs.

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**Laboratory Diagnosis of Venereal Disease.** SCHEPERS, G. W. H. (1966). *Med. Ann. D. C.*, 35, 357. 14 tables.

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